

Shielding Gas Tank and Regulator Setup

Protective shielding gas is used, such as 99.996% pure Argon (Argon 4.6) or higher.

Step 1: Secure Shielding Gas



Secure gas tank to a stationary point near the welding area.

Step 2: Close the regulator dial



Turn regulator dial **COUNTER CLOCKWISE** until it is fully backed out to prevent over-pressurization of the line.

Step 3: Screw on the gas regulator



Screw the gas regulator onto the shielding gas tank.

Step 4: Connect gas tubing into the gas regulator



Insert the gas tube into the regulator. It will stop when it is fully connected. Tug gently on the tube to verify a tight fit.

Step 5: Connect gas tubing to welder



Insert shield gas hose from the argon gas regulator into the back of the welder. It will stop when it is fully connected. Tug gently on the tube to verify a tight fit.

Step 6: Open the gas tank



Slowly turn the knob on the gas tank.

Step 7: Open the regulator dial



Slowly turn the regulator knob **CLOCKWISE** until the gas pressure reads between 7-10psi. The dial on the left side of the regulator should adjust.

Electrode Setup

Clean and Shape the Electrode

1. Attach the provided diamond disk to a dremel (or similar type tool). Power on the dremel and hold it in one hand (close to your body to keep it steady).
2. Place the electrode in your other hand between the thumb and index finger.
3. Touch the electrode to the diamond disk (at your desired angle) and rotate the electrode in the same direction multiple times until it is clean/sharp.
4. Run the electrode shaft parallel with the rotating plate, do not run it perpendicular to the electrode shaft.



*Desired angle is 15°

Electrode Shaping:

Stylus Cone



Stylus Cone



Waveform Settings:

GENERAL SETTINGS						
Application	Tip Shape	Waveform	Ignition	Agitation	Length	Power
Copper (0.015 - 0.020)	Sharp	Triangle	Standard +	None	40 ms	11 kW

IGNITION SETTINGS	
Tip Lift Off Delay	60ms
Retraction Distance	1.0mm

NOTE: If you have purchased the microscope upgrade, please visit the product page for the 250i EV System online and download the user manual for set-up instructions.

REMEMBER: When welding, the tip of the nose cap should be 1/8" above the work piece.

Orion 250i EV Quick Start Guide

Congratulations on purchasing your Orion 250i EV System! This is your quick set-up guide to get you welding as soon as possible. For questions, please contact our customer support at +1-801-658-0015.



For detailed set-up instructions, online video tutorials, and full user manuals, please visit our website. For model specific information, navigate to the 250i EV product page and click on the tab marked downloads.

Welder Set-up

Contents you will receive:

- (1) Quick Start Guide/ Quick Setting Guide
- (1) Orion i Series Welder
- (1) EV Weld Head
- (1) Power Supply
- (1) Microscope
- (1) Microscope Extender Arm
- (1) Microscope Arm Table Mount
- (1) Microscope Arm Support Bar
- (1) 10 pin power cable
- (1) Electrode Vial (5x 0.5mm -- 5x 1.0mm Electrodes -- 1x Diamond Dremel Disk -- 1x 0.5mm Orion Collet)
- (1) Fiberglass Brush
- (1) Stainless Steel Weld Sample Card
- (1) 3 Allen Wrenches
- *With Upgraded Microscope
 - (1) Stylus Hand Piece
 - (1) Pair Alligator Clips
 - (1) Loop Closing Pliers
 - (1) Pair Microscope Eye Piece Shields
 - (1) Green microscope protective cover

Accessories:

- (1) Welder Power Cord
- (1) Foot Pedal
- (1) Shielding Gas Hose

Step 1: Mount the microscope arm table mount to the table



The Orion microscope arm table mount will clamp to any table top. Simply place the table mount on your tabletop in the desired location and then tighten the screw located at the bottom of the table mount with an allen wrench. Align the table mount screw with the center hole of the included steel plate and then tighten. This steel plate will help spread the weight of the system and provide more support.

Step 2: Insert the arm into the microscope arm table mount



Insert the bottom end of the microscope arm into the microscope arm table mount.

Step 3: Connect the welder to the arm base



Insert the welder into the top of the arm. Then use an Allen wrench to secure the welder in place on the arm.

Step 4: Connect the power cable and AC power



Plug the power cable into the back of the welder and to the power supply box. Now plug the AC power cord into the power supply box. Last, plug the end of the AC power cord into any standard 110-220VAC outlet.

Step 5: Connect the foot pedal



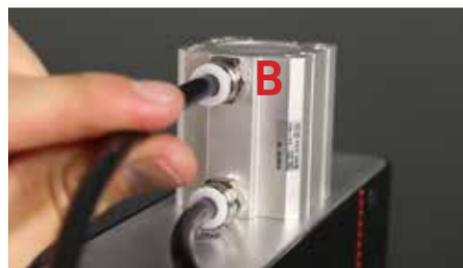
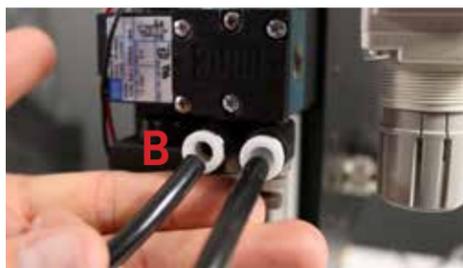
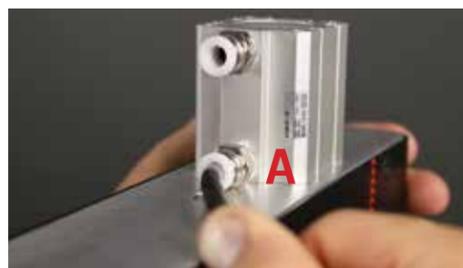
Plug the 3 DIN foot pedal connector into the port on the back of the welder marked "Trigger".

Step 6: Connect the compressed air tube to the weld head



Plug the tube from the compressed air tank into the air valve system on the back of the weld head.

Step 7: Connect the compressed air tubes from the air valve



There are two air valve ports on the back of the weld head and two ports at the top of the weld head. The right port (A) connects to the bottom port on the top (A) of the weld head. The left port (B) connects to the upper port on the top (B) of the weld head.

Step 8: Connect the shield gas tube



Using the provided splitter, plug the tubes into the gas port on the back of the welder and into the port on the back of the weld head at the bottom of the air valve.

Step 9: Plug the 4 DIN connector into the valve control system



Plug the 4 DIN Connector on the back of the Weld Head into the Valve Control port on the side of the Weld Head.

Step 10: Connect the wires on the EV weld head to the welder



Using the wires on the weld head, connect the red wire to the positive port and the black wire to the negative port.

Step 11: Connect the EV weld head to the welder using the RJ-11 cable



Plug the RJ-11 cable into the Acc. Port on the back of the welder then to the port on the weld head that reads "to welder".

Step 12: Plug in the AC cable into the EV weld head



Plug the AC power cable into the side of the weld head. Then plug the other end into any standard 110-220VAC outlet.

Step 13a: Mount EV weld head to a table (Optional Step)



Pull the cap off the front of the weld head base. Drill four holes into your table top. Slide the screws into the base, then lower the weld head into the screw holes. This will ensure your weld head will be secured in place during welding.

Step 13b: Install the EV weld head base plate



Now slide the base plate onto the base of the weld head and tighten the wheel on the side of the base plate to secure. Then replace the base plate cap.

Step 14: Install the electrode in the nose cap



Remove the nose cap from the weld head and twist the electrode holder counter clockwise to open the collet. Insert the electrode into the collet. Tighten the electrode holder clockwise to secure the electrode in place. The electrode should protrude about a half inch out of the holder. Now replace the nose cap. *When welding, the tip of the nose cap should be 1/8" above the work piece.

Step 15: Power the welder and the EV weld head



Turn on the welder with the button on the bottom of the welder, then turn on the weld head with the switch found on the side. Once both are powered the welder interface should display the EV mode tab. If you don't see this tab you may be missing a connector or may have not powered the weld head.